

SEMESTER COURSE PLAN

**COASTAL DYNAMICS (P3) COURSES
(23H06132302)**



TEACHING TEAM

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STUDI PROGRAM OF GEOPHYSICS - S1
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
HASANUDDIN UNIVERSITY
MAKASSAR
2025

**STUDY PROGRAM OF GEOFISIKA - S1
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
HASANUDDIN UNIVERSITY**

Vision

Become a program Reliable studies in the field of geophysics to produce superior graduates and mastering science, technology, arts and culture based on BMI in 2030.

Vision Strategy

Mission

Based on the Vision above, the Geophysics Study Program has a mission:

1. Improving the quality of education to produce graduates who are competitive, able to work independently and in groups in implementing and developing science and technology, SBUD BMI;
2. Carrying out research to produce reliable and competitive scientific work oriented towards scientific development solid geophysics, marine geophysics, geoinformatics and hydro-meteorology;
3. Disseminate the results of applied research, action studies and appropriate technology packages in synergistic and accelerated productive activities to improve the quality of life of the community.

Graduate Profiles

Educators in the Field of Geophysics; meteorologist; geomaths; oceanographer; exploration geophysicist; seismologist ; geophysical entrepreneur.

PLO charged to courses

CPL-8 (KU1) - Able to apply logical, critical, systematic and innovative thinking in developing or applying geophysical science by considering human values, and able to analyze and communicate case studies and research results using geophysical tools through scientific reports, international presentations and article publications, as well as uploading them on the university website.

CPL-9 (KU2) - Able to demonstrate independent, quality and measurable performance in maintaining professional collaboration with supervisors and colleagues at national and international levels, as well as completing tasks responsibly using relevant modern geophysical tools

CPL-11 (KK1) - Able to apply the principles of mathematics and earth science, as well as the principles of Exploration and Mitigation to solve natural resource exploration and disaster mitigation problems (Exploration natural resources and natural disaster mitigation)

Course Learning Outcomes (CLO)

CPMK-1: Students are able to analyze and model processes that occur in coastal areas such as changes in beach morphology, sediment transport, abrasion and accretion in coastal areas. (CPL8, CPL9 dan CPL11)

Sub-CLO

Sub CPMK-1: Students analyze and can identify the theory of nearshore currents (CPMK-1)

Sub CPMK-2: Students analyze and can identify the Physical Characteristics of Beach Sediments (CPMK-1)

Sub CPMK-3: Students analyze and can identify sediment transport (CPMK-1)

Sub CPMK-4: Students analyze and can identify coastal erosion (CPMK-1)

Sub CPMK-5: Students analyze and can identify beach management (CPMK-1)

Learning Analytics

Beach Dynamics (P3)



Students analyze and can identify beach management (CPMK-1)



Students analyze and can identify coastal erosion (CPMK-1)



Students analyze and can identify sediment transport (CPMK-1)



Students analyze and can identify the Physical Characteristics of Beach Sediments (CPMK-1)



Students analyze and can identify the theory of nearshore currents (CPMK-1)



HASANUDDIN UNIVERSITY
FAKULTY OF MATHEMATICS AND NATURAL SCIENCES
STUDY PROGRAM OF GEOPHYSICS - S1
SEMESTER LEARNING PLAN

Course		Code	Course Group	Credits	SEMESTER	Compilation Date
Beach Dynamics (P3)		23H06132302		2	5	1 Juli 2025
AUTHORITY		SLP Developer Lecturer		Coordinator		Head of Study Program
		Dr. Sakka, M.Si.		Dr. Sakka, M.Si.		Dr. Muhammad Alimuddin, Eng.
Learning Outcomes Course	SLOs that are imposed on the course					
	SLO-8:	Mampu menerapkan pemikiran logis, kritis, sistematis, dan inovatif dalam mengembangkan atau menerapkan ilmu geofisika dengan mempertimbangkan nilai-nilai kemanusiaan, serta mampu menganalisis dan mengkomunikasikan studi kasus dan hasil penelitian menggunakan perangkat geofisika melalui laporan ilmiah, presentasi internasional, dan publikasi artikel, serta mengunggahnya pada laman universitas.				
	SLO-9:	Mampu menunjukkan kinerja yang mandiri, berkualitas, dan terukur dalam menjaga kolaborasi profesional dengan pembimbing dan rekan kerja di tingkat nasional maupun internasional, serta menyelesaikan tugas secara bertanggung jawab dengan menggunakan perangkat geofisika modern yang relevan				
	SLO-11:	Mampu menerapkan prinsip-prinsip matematika dan sains kebumihan, serta prinsip Eksplorasi dan Mitigasi untuk menyelesaikan masalah eksplorasi SDA dan mitigasi bencana (Exploration natural resource and natural disaster mitigation)				
	SLO ⇒ Course Learning Outcomes					
	After completing this course, it is expected:					
	SLO-8	CLO-1: Students are able to analyze and model processes that occur in coastal areas such as changes in beach morphology, sediment transport, abrasion and accretion in coastal areas.				
	SLO-9	CLO-1: Students are able to analyze and model processes that occur in coastal areas such as changes in beach morphology, sediment transport, abrasion and accretion in coastal areas.				
	SLO-11	CLO-1: Students are able to analyze and model processes that occur in coastal areas such as changes in beach morphology, sediment transport, abrasion and accretion in coastal areas.				
	CLO ⇒ Sub-CLO					
	CLO-1	Sub-CLO-1:Students analyze and can identify the theory of nearshore currents				
		Sub-CLO-2:Students analyze and can identify the Physical Characteristics of Beach Sediments				
		Sub-CLO-3:Students analyze and can identify sediment transport				
		Sub-CLO-4:Students analyze and can identify coastal erosion				
		Sub-CLO-5:Students analyze and can identify beach management				

	Correlation between SLOs/CLOs to Sub-CLOs							
SLOs that are charged on the Course	CPMK	SUB CPMK	Form of Assessment*			Weight	Value	Student Score
			Formative	Sumative				
				Project/Case Study	Summative Test			
SLO-11	CLO-1	SUB-CLO-1	Questions and answers	15	0	15		
SLO-11	CLO-1	SUB-CLO-2	Assignments/Homework Questions and answers	20	0	20		
SLO-11	CLO-1	SUB-CLO-3	None	15	10	25		
SLO-11	CLO-1	SUB-CLO-4	Assignments/Homework Questions and answers	20	0	20		
SLO-11	CLO-1	SUB-CLO-5	Questions and answers and -	10	10	20		
				80	20	100		
Course Description	This course discusses beach morphology, near-shore currents, sediment characteristics and transport, beach erosion, and management beach.							
Learning Materials/Subjects	1. Beach Morphology 2. Nearshore currents 3. Physical Characteristics of Beach Sediments 4. Sediment transport 5. Beach Erosion 6. Coastal management							
Reference	Main References							
	1. Baart, S., Ebbens, R., Nammuni-Krohn, J. and Verhagen, H.J., 2010. Toe rock stability for rubble mound breakwaters. Proc. 32nd ICCE 2010, Sjanghai, China. 2. Horikawa K. 1988. Nearshore dynamics and coastal processes. Japan: University of Tokyo Press. 3. Komar PD. 1983. CRC Handbook of coastal processes and erosion. Florida: CRC Press. Inc. Boca Raton. 4. USACE (US Army Corps of Engineers). 1984. Shore protection manual. Washington DC: Department of the Army. US. Army Corp of Engineers. 5. USACE (US Army Corps of Engineers). 2003a. Meteorology and wave climate. Part II. Washington DC. Department of the Army. US. Army Corp of Engineers. 6. USACE (US Army Corps of Engineers). 2003b. Coastal sediment processes. Part III. Washington DC: Department of the Army. US. Army Corp of Engineers							
	Additional References							
	Gagal diterjemahkan							

Teaching Team		Dr. Sakka, M.Si.					
Course requirement							
Week	Sub CPMK (End-of-stage learning ability)	Penilaian (Assesment)		Learning Forms and Methods [time estimate]		Content	Weight of Assessment (%)
		Indicator	Techniques & Criteria	Offline	Online		
1	2	3	4	5	6	7	8
1-3	Students analyze and can identify the theory of nearshore currents (CPMK-1)	Formative: The accuracy of applying the concept to answers about nearshore currents Sumative: -	Formative Criteria: Questions and answers Sumative Criteria: Project/Case Study (15) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Case Study, Project-Based Learning BP: Discussion None		Current-current near the beach: - Coastal Current - Coast Perpendicular Current	15
4-7	Students analyze and can identify the Physical Characteristics of Beach Sediments (CPMK-1)	Formative: The accuracy of applying concepts to answers about the Physical Characteristics of Beach Sediments Sumative: -	Formative Criteria: Assignments/Homework Questions and answers Sumative Criteria: Project/Case Study (20) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Case Study, Project-Based Learning BP: Discussion None		Characteristics Physical Beach Sediment: - Grain size - Fall velocity of sand particles - Settling velocity of mud flocs - Initiation of motion - Initiation of suspension - bulk density of bed materials	20

8-10	Students analyze and can identify sediment transport (CPMK-1)	Formative: - Sumative: -	Formative Criteria: None Sumative Criteria: Project/Case Study (15) dinilai dengan rubrik 1 Summative Test (10) dinilai dengan rubrik 1 Assessment Technique: Test and Non-Test	Studying: Case Study, Project-Based Learning BP: Discussion None		Transport sediment on the beach: - River flow and sand transport - Longshore sediment transport - Sediment transport perpendicular to the coast	25
12-13	Students analyze and can identify coastal erosion (CPMK-1)	Formative: The accuracy of applying concepts to answers about coastal erosion Sumative: -	Formative Criteria: Assignments/Homework Questions and answers Sumative Criteria: Project/Case Study (20) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Case Study, Project-Based Learning BP: Discussion None		Coastal Erosion: - Dune erosion - Beach Erosion based on Hydrodynamic Conditions - Line change model beach	20
14-15	Students analyze and can identify beach management (CPMK-1)	Formative: The accuracy of applying concepts to answers about coastal management Sumative: -	Formative Criteria: Questions and answers Sumative Criteria: Project/Case Study (10) dinilai dengan rubrik 1 Assessment Technique: Non Test	Studying: Case Study, Project-Based Learning BP: Discussion None		Beach management	10

16	Students analyze and can identify beach management (CPMK-1)	Formative: - Sumative: -	Formative Criteria: None Sumative Criteria: Summative Test (10) dinilai dengan rubrik 1 Assessment Technique: Test			Summative Test	10
							100

Matrix of SLO, CLO, and Assessment Method

SLO / CLO	CLO-1
CPL-8 (KU1)	Project/Case Study (Weight 15%) Project/Case Study (Weight 20%) Project/Case Study (Weight 15%) Summative Test (Weight 10%) Project/Case Study (Weight 20%) Project/Case Study (Weight 10%) Summative Test (Weight 10%)
CPL-9 (KU2)	Project/Case Study (Weight 15%) Project/Case Study (Weight 20%) Project/Case Study (Weight 15%) Summative Test (Weight 10%) Project/Case Study (Weight 20%) Project/Case Study (Weight 10%) Summative Test (Weight 10%)

SLO / CLO	CLO-1
CPL-11 (KK1)	Project/Case Study (Weight 15%) Project/Case Study (Weight 20%) Project/Case Study (Weight 15%) Summative Test (Weight 10%) Project/Case Study (Weight 20%) Project/Case Study (Weight 10%) Summative Test (Weight 10%)

Evaluation Type and Assessment Weight

Type	Assessment Weight
Project/Case Study	80
Summative Test	20
Total	100

Assessment and Evaluation of Student Achievement of CLOs

SLOs that are charged on the Course	CLO	SUB CLO	Form of Assessment*			Weight	Value	Student Score
			Formative	Sumative				
				Project/Case Study	Summative Test			
SLO-11	CLO-1	SUB-CLO-1	Questions and answers	15	0	15		
SLO-11	CLO-1	SUB-CLO-2	Assignments/Homework Questions and answers	20	0	20		
SLO-11	CLO-1	SUB-CLO-3	None	15	10	25		
SLO-11	CLO-1	SUB-CLO-4	Assignments/Homework Questions and answers	20	0	20		
SLO-11	CLO-1	SUB-CLO-5	Questions and answers and -	10	10	20		
				80	20	100		

Lampiran Rubrik 1 | Rubrik Holistik

Tabel 6. 1 Rubrik Holistik		
Grade Capaian	Skor	Uraian
Sangat Baik	≥ 85	Memperlihatkan pemahaman yang lengkap tentang permasalahan. Semua metode dan persyaratan tentang tugas terdapat dalam jawaban
Baik	71 - 84	Memperlihatkan cukup pemahaman tentang permasalahan. Semua persyaratan tentang tugas terdapat dalam jawaban
Cukup Baik	61 - 70	Memperlihatkan hanya sebagian pemahaman tentang permasalahan. Kebanyakan persyaratan tentang tugas terdapat dalam jawaban
Kurang	51 - 60	Memperlihatkan sedikit pemahaman tentang permasalahan. Banyak persyaratan tugas yang tidak ada
Sangat kurang	< 51	Memperlihatkan tidak ada pemahaman tentang permasalahan